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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,969	11/17/1999	SHUNICHI SEKI	104741	7385

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EXAMINER
MAI, ANH D

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 09/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/423,969	Applicant(s) SEKI ET AL.
	Examiner Anh D. Mai	Art Unit 2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-80* is/are pending in the application.

4a) Of the above claim(s) *30-47,49-68,72,74 and 80* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29,48,69-71,73 and 75-79* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *13-16 and 25-29* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 November 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *11* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Claims 13-16, 25-29 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: applicant has elected claims that directed to the invention of device. (See Paper No. 7).

This invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13-16, 25-29 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

2. This application contains claims drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

For example: page 47, line 3: "pixel electrode **42** is formed".

-Where is "42" in the drawing?

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show element "**42**" as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-29, 48, 69-71 and 75-79 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

All claims are generally **narrative and indefinite**, failing to conform with current U.S. practice. They appear to be a **literal translation into English from a foreign document** and are replete with grammatical and idiomatic errors.

With respect to the term "ink jet liquid droplet diameter", since this is a device claim, the diameter of the liquid droplet is irrelevant.

With respect to claims 48, 69-71 and 73, these claims are further rejected for being indefinite because they are depended on **non-elected method claims**. Therefore, it is not clear which limitations are included in the claims.

7. Claims 1-29, 48, 69-71, 73 and 75-79 are further rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the banks and the ink jet liquid droplet.

The claims fail to place the ink jet liquid droplet in a location with respect to the banks.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-9, 13-22, 28, 29, 48, 69-73 and 75-79 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shirasaki et al. (JP. Patent No. 11-040354) (IDS).

With respect to claim 1, insofar as the device is concerned, and as best understood by the examiner, Shirasaki teaches a thin film patterning substrate as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); the banks (1e) having a width, a height thereof, the areas to be coated having a width; and

a liquid material (1d) coated the areas (6) partitioned by the banks (1e). (See Fig. 4).

Note that, since the liquid material (1d) coated the areas (6) partitioned by the banks (1e) therefore, it satisfied the relationship as claimed.

With respect to claims 2-4, the banks (1e) of Shirasaki appears to satisfied relationships as claimed.

With respect to claim 5, the thin film patterning substrate of Shirasaki further includes: an organic substance (1d) formed on at least upper surfaces of the banks (1e).

With respect to claim 6, the thin film patterning substrate of Shirasaki further includes: an organic substance (1d) formed on at least upper surfaces and side surfaces of the banks (1e).

With respect to claim 7, the thin film patterning substrate of Shirasaki further includes: the banks (1e) being formed in two layers including: a lower-layer (1e) of inorganic substance (SiO_2) and an upper-layer (1d) of organic substance.

With respect to claim 8, the device of Shirasaki further includes: at least the side surface of the inorganic substance (1e) are not covered by the organic substance (1d).

With respect to claim 9, the device of Shirasaki further includes: the areas (6) to be coated being an inorganic substance (1b).

With respect to claims 13 and 14, as best understood by the examiner, the device of Shirasaki is using the thin film patterning substrate.

With respect to claims 15 and 16, as best understood by the examiner, the thin film elements (1d) of Shirasaki being an organic EL element wherein the organic thin film (1d) having light-emission colors are independently patterned.

With respect to claim 17, the device of Shirasaki is a display device comprising a thin film element as claimed.

With respect to claim 18, the device of Shirasaki comprises the display device and a circuit device for the display device. (See Figs. 8-9).

With respect to claim 19, Shirasaki teaches a thin film patterning substrate used for forming thin films in patterns as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); and

the banks (1e) having surfaces being formed of an organic substance (1d), and the areas to be coated (6) are formed of an inorganic substance (1b). (See Fig. 4).

Product by process limitation:

The expression "patterns by a dip process or spin-coating process" is taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

With respect to claim 20, Shirasaki teaches a thin film patterning substrate used for forming thin films in patterns as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); and

the banks (1e) having upper surfaces and side surfaces being formed of an organic substance (1d), and the areas to be coated (6) are formed of an inorganic substance (1b). (See Fig. 4).

Product by process limitation: (See above).

With respect to claim 21, Shirasaki teaches a thin film patterning substrate used for forming thin films in patterns as claimed including:

a surface whereof are formed banks (1e) and areas to be coated (6) partitioned by the banks (1e); and

the banks (1e) being formed in two layers including a lower-layer of inorganic substance (1e) and an upper-layer of organic substance (1d), and the areas to be coated (6) are formed of an inorganic substance (1b). (See Fig. 4).

Product by process limitation: (See above).

With respect to claim 22, the device of Shirasaki further includes: the banks having side surfaces of a lower-layer (1e) not covered by the organic substance (1d).

With respect to claims 25-27, as best understood by the examiner, the device of Shirasaki is formed.

Product by process limitation:

The expression "having a surface tension of 30 dyn/cm or less" is taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a "product by process" claim, and not the

patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

As a device, the thin film is no longer in liquid form, therefore, the surface tension of the liquid is irrelevant in a device claim.

With respect to claims 28 and 29, the device of Shirasaki is a display device and includes an electronic circuit for the display device. (See Figs. 8-9).

With respect to claims 48 and 69, as best understood by the examiner, Shirasaki teaches a display device.

With respect to claims 70, 71 and 73, as best understood by the examiner, the display device of Shirasaki comprising a color filter, an organic EL element.

With respect to claim 75, the device of Shirasaki includes a horizontal shape portions enclosed by the banks (1e) being circular or elliptical.

With respect to claim 76, Shirasaki teaches a thin film patterning substrate having a substrate (1a) and banks (1e) formed on the substrate (1a) in a prescribed pattern, opening in the banks (1e) being formed in a ring shape.

With respect to claim 77, the ring shape opening in the banks (1e) of Shirasaki includes circular or elliptical shape.

With respect to claim 78, Shirasaki teaches an EL element having a substrate (1a) and banks (1e) formed on the substrate (1a) in a prescribed pattern, and thin film of a light emitting material (1d) in areas enclosed by the banks (1e), a shape of openings in the banks (1e) being formed in a ring shape.

With respect to claim 79, the ring shape opening in the banks (1e) of Shirasaki includes circular or elliptical.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki '354 as applied to claim 1 above, and further in view of Nagayama et al. (U.S. Patent No. 6,373,187).

Shirasaki teaches all the features of the claim with the exception of explicitly disclosing a reservoir (groove) structure on the upper surface of the banks (1e).

However, Nagayama teaches recess portion (120c) formed on the top surface of the partition walls (120a) to enhance an effect of preventing a possible electric short.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to form recess (120c) on the upper surface of the partition banks (1e) of Shirasaki as taught by Nagayama to prevent possible electric short between two adjacent electrode.

10. Claims 11, 12, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki '354 as applied to claims 5 and 19 above, and further in view of Tabayashi (JP. Patent No. 06-347637) (IDS).

With respect to claims 11 and 23, as best understood by the examiner, Shirasaki teaches all the features of the thin film patterning substrate as claimed with the exception of further includes a surface treatment of the banks (1e).

However, Tabayashi teaches treating the partition pattern so that the partition pattern contains a substance based water-repellent and oil-repellent agent.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to treat the surface of the thin film pattern substrate of Shirasaki using the repellent –based as taught by Tabayashi to obtain uniform light transmissivity and freed from defective pixel.

Product by process limitation:

The expression "being performed so that an angle of contact of the organic substance surface forming said banks is....thin film liquid material is 30° or greater (or less)" "by plasma treatment" are taken to be a product by process limitation and is given no patentable weight. A product by process claim directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a

"product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

With respect to claims 12 and 24, the thin film pattern substrate of Shirasaki, in view of Tabayashi has been surface modified.

Response to Arguments

11. Applicant's arguments with respect to elected claims have been considered but are moot in view of the new ground(s) of rejection.

Rewritten of all claims to conforms to the U.S. practice are strongly urged.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh D. Mai whose telephone number is (703) 305-0575. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.M
September 10, 2002

OLIK CHAUDHURI
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